ATTACHMENT L: RAPTOR NEST SURVEY REPORT

2021 Raptor Nest Survey for the Wautoma Solar Project

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Acronyms and Abbreviations

Innergex	Innergex Renewable Development USA, LLC
PHS	Priority Habitats and Species
Project	Wautoma Solar Project
Tetra Tech	Tetra Tech, Inc.
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife

1.0 Introduction

Innergex Renewable Development USA, LLC (Innergex) plans to develop the Wautoma Solar Project (Project) located in Benton County, Washington approximately 12.5 miles northeast of the city of Sunnyside (Figure 1).

As part of its environmental due diligence, Innergex contracted Tetra Tech, Inc. (Tetra Tech) to conduct raptor nest surveys for the Project. The purpose of the raptor nest surveys was to inventory raptor nests within the approximately 4,819-acre Project area and a 0.5-mile buffer (Survey Area) to support Project permitting and inform potential avoidance and minimization measures (Confidential Figure 2). Because the U.S. Fish and Wildlife Service (USFWS) and the Washington Department of Fish and Wildlife (WDFW) have not issued guidance pertaining to raptor nest surveys for solar projects, the survey approach was based on wind energy guidelines (USFWS 2012, USFWS 2013, USFWS 2016, USFWS 2020, WDFW 2009) and in coordination with WDFW, as described below.

2.0 Description of the Survey Area

The Survey Area is the Project area and 0.5-mile buffer of the Project area as shown on Figure 2 (Confidential). Tetra Tech performed three rounds of ground-based surveys in 2021. The first two survey rounds occurred during the breeding season and covered the Project area (which was approximately 3,658 acres at the time of survey) plus a 0.5-mile buffer (i.e., Spring 2021 Survey Area; Confidential Figure 2). Afterwards, the Project area was expanded by approximately 990 acres. To accommodate the areas added to the Project area, Tetra Tech performed a third round of surveys in the fall, outside the period of active nest use by raptor species. The fall survey covered the newly added portions of the Project area plus a 0.5-mile buffer (i.e., Fall 2021 Survey Area; Confidential Figure 2).

3.0 Agency Coordination

Innergex and Tetra Tech met with WDFW via video meeting on March 8, 2021, to introduce the Project and discuss planned wildlife, habitat, and rare plant surveys. At the meeting, WDFW concurred with the raptor nest survey approach and gave a verbal description of known raptor nest locations and special-status wildlife that may occur in the Project vicinity. Based on anticipated impacts to raptors from construction and operation of a solar project, WDFW recommended reducing an initially proposed survey area of a 2-mile buffer around the Project area to a 0.5-mile buffer (Michael Ritter, personal communication, March 8, 2021).

Tetra Tech requested fish and wildlife information within 5 miles of the Project area from the WDFW Priority Habitats and Species (PHS) Program in February 2021. The PHS database had nine nest records of raptors tracked by PHS within 5 miles of the Project area, including five ferruginous

hawk (*Buteo regalis*; designated state threatened at the time of surveys and subsequently uplisted to endangered) nests, three prairie falcon (*Falco mexicanus*) nests, and one burrowing owl (*Athene cunicularia*; state candidate) nest (WDFW 2020, 2021a, 2021b). However, the burrowing owl nest was the only nest located within the Survey Area, located approximately 0.25 mile north of the Project area. Although golden eagles (*Aquila chrysaetos*) are commonly identified within the open habitats of eastern Washington, the PHS database had no golden eagle nest records within the Survey Area. The PHS program does not track bald eagle (*Haliaeetus leucocephalus*) nests, but nesting bald eagles are rare or absent from the Columbia Basin and southeastern Washington (WDFW 2021a) and, based on a lack of suitable habitat conditions (Buehler 2020), bald eagle nests were not expected to be observed during the surveys.

4.0 Methods

4.1 Field Surveys

As described in Section 2.0, Tetra Tech performed three rounds of ground-based surveys in 2021. All three survey rounds were performed by a biologist experienced in identifying raptor nests found in the region. Nesting substrate within the Survey Area was investigated along public and private roads (two tracks) by vehicle and cross country on foot. The 0.5-mile buffers were searched by scanning the area from public roads or the lease boundary. The biologist made periodic stops to scan areas with suitable habitat and examine nests with the aid of binoculars and a spotting scope. The location of any concentrations of prey for golden eagles and ferruginous hawks (such as ground squirrel colonies, large herds of elk or mule deer, and carrion), and incidental observations of eagles or threatened or endangered wildlife species were to be recorded by the biologist.

The first survey round was conducted March 13, 2021. The timing of the first survey coincided with the early nesting period when most breeding pairs exhibit courtship, nest-building, or incubation behaviors, and prior to the emergence of foliage on broadleaf trees. The biologist attempted to check the status of the historical PHS burrowing owl nest and recorded all new raptor nests observed within the Spring 2021 Survey Area.

The second survey was conducted May 10-12, 2021. During this period, most raptors were engaged in mid- to late-breeding season reproductive activities (e.g., incubating, brooding, feeding nestlings). The biologist searched for new nests checked the status of the nests found during the initial survey.

The third survey was conducted on October 2, 2021, after leaves had begun to fall from trees, to maximize the number of nests detected. The objective of the fall survey was to locate unoccupied (inactive) above ground raptor nest structures within the Fall 2021 Survey Area. The biologist searched for new nests and checked on the status of known nests found during spring 2021 that were located within the Fall 2021 Survey Area. Any incidental ground nests (e.g., burrowing owl burrows) detected by the biologist were to be recorded.

4.2 Data Collection

A tablet computer with ArcGIS mapping software and electronic data forms was used during the surveys to aid in navigation and record data. For each raptor nest, the following data were collected:

- **Nest Identification Number:** Corresponding with the coordinates of the site location.
- **Raptor Species:** If identified, the type of species was recorded. If species using the nest could not be determined, the species was recorded as unknown.
- **Adult Present:** Proximity of the adult to the nest (e.g., on nest, nearby, or unknown).
- **Eggs or Young:** Number of eggs or young observed.
- **Nest Size:** Classified as large or small; small nests were those estimated by the biologist as having a diameter of less than 24 inches, comprised of smaller sticks, and with other characteristics typical of nests used by smaller raptors and not by eagles. Large nests were those estimated by the biologist as having a diameter of 24 inches or greater, comprised of larger sticks, and with other characteristics typical of nests used by eagles and other large raptors.
- **Nest Substrate:** Structure in which nest was located (e.g., broadleaf tree, cliff, artificial nest structure, etc.).
- **Nest Height:** Height relative to the structure it was on (e.g., on top of transmission pole, 3/4 of height of tree).
- **Nest Status:** To assess nest status, the following terms were adapted from the USFWS Eagle Rule (USFWS 2016) and Postupalsky (1974):
    - Inactive: Defined by the absence of any adult, egg, or dependent young at the nest, or signs of building or adding to the nest in preparation for egg-laying. This term is specific to non-eagle nests.
    - In-use nest: The presence of eggs, dependent young, or adult on the nest, or signs of building or adding to the nest in preparation for egg-laying. This term applies to eagle and non-eagle nests.
    - Alternate nest: One of potentially several nests within an eagle territory that is not an in-use nest at the time of surveys. When there is no in-use nest, all nests in the territory are alternate nests. This term is specific to eagle nests.
    - Unknown: A nest not detected during the first round of surveys which may have gone undetected or been built subsequent to the survey, or a nest that is present but for which surveyors are unable to determine status (e.g., vegetation around the nest site obscured the view of nest, etc.). This term applies to eagle and non-eagle nests.

  - No Longer Present: A nest that was located during a previous survey but has subsequently been positively ascertained to be destroyed and no evidence of the nest remains. This term applies to eagle and non-eagle nests.
  - Not Found: A previously known nest that could not be located (e.g., road or access limitations), but that may still exist (not the same as "No Longer Present" above). This term applies to eagle and non-eagle nests.
  - Not Surveyed: A known nest that occurred outside of the given survey area, or that could not be surveyed due to other reasons (e.g., no landowner permission, the presence of nearby cattle, etc.). This term applies to eagle and non-eagle nests.
  - Failed: A nest for which evidence indicates nest initiation (egg-laying), but the nest failed to produce any chicks to fledging age. This term applies to eagle and non-eagle nests.
- **Nest Condition:** To assess nest condition, the following criteria were used (Postupalsky 1974):
  - Excellent: Defined cup or nest bowl with a well-maintained rim; adult or young present.
  - Good: Nest bowl intact and rim defined; minor repair needed for nest to be used; margins of nest in loose configuration, minor slumping occurring.
  - Fair: Nest bowl intact and nest not dilapidated but needs significant repair in order to be used; material is slumping or sliding.
  - Poor: Loose structure of nest bowl still present; nest walls and side falling out; nest is in need of major repair to be used.
  - Remnant: Nest bowl not defined; scant material remaining and not usable unless fully rebuilt.
  - Unknown: The nest cannot be found, was not surveyed, or the nest is present, but because of its location, a determination cannot be made.
  - Not Applicable: Nest no longer present.

5.0 Results and Discussion

A total of 15 nests were detected during the surveys, including three in-use burrowing owl nests, two in-use Swainson's hawk (*Buteo swainsoni*) nests, one in-use red tailed hawk (*Buteo jamaicensis*) nest, one in-use great horned owl (*Bubo virginianus*) nest, five in-use common raven (*Corvus corax*) nests, and three small inactive nests with unknown species determinations (Table 1; Confidential Figure 2). Although not raptors, common raven nests were recorded during raptor nest surveys because they could be used by nesting raptors during subsequent breeding seasons. All of the

inactive nests were small and not consistent with the size of a golden eagle or ferruginous hawk nest. Common raven Nest 003 was in-use during the first survey but no longer present during the second survey. The biologist suspected that ravens removed nesting material from Nest 003 and added to it to an adjacent common raven nest (Nest 106; Table 1). Because Nest 003 was no longer present, it is not depicted in Confidential Figure 2.

All of the nests were found during the spring surveys; six nests were found during the first survey, nine nests were found during the second survey, and no nests were found during the third survey. Although all three known nests checked during the third survey were still present (Nests 002, 100, and 108; Confidential Figure 2), the nests were no longer in excellent condition (one was in good condition and the other two were in poor condition). The historical PHS burrowing owl nest was not visible from the lease boundary; therefore, the status of the nest is unknown.

Suitable nesting habitat within the Survey Area was primarily limited to utility towers and poles, a few large mature trees and shrubs, and the ground. No suitable cliffs or rock outcrops were observed within the within the Survey Area. Eight of the nests were located on manmade structures (seven on utility towers and one on a power pole), four were in trees (two in broadleaf trees, one in a conifer, and one in a snag) and three were burrows in the ground; Table 1).

No eagles or federally-listed threatened or endangered species were documented during the raptor nest surveys. WDFW has designated the burrowing owl as a candidate for listing as state endangered, threatened, or sensitive, and thus, it is a WDFW priority species. No potential burrowing owl burrows or other ground nests were observed during the third survey round. No ferruginous hawk individuals or ferruginous hawk nests were observed during this survey; however, a single ferruginous hawk was observed briefly soaring in an area of native grassland habitat in the far southwestern edge of the Project during the Spring 2021 habitat and general wildlife survey (Tetra Tech 2022). More comprehensive pedestrian sweeps will be performed across the Fall 2021 Survey Area during habitat and general wildlife surveys planned for spring 2022.

Table 1. Wautoma Solar Project 2021 Raptor Nest Survey Results

Nest ID	Species	First Round Nest Status	Second Round Nest Status	Third Round Nest Status	Nest Size	Nest Substrate	Survey Notes
102	Burrowing Owl	Unknown	In-use	Not Surveyed	Not Applicable	Ground	Two adults observed at burrow during the second round.
103	Burrowing Owl	Unknown	In-use	Not Surveyed	Not Applicable	Ground	One adult observed at burrow during the second round.
104	Burrowing Owl	Unknown	In-use	Not Surveyed	Not Applicable	Ground	One adult observed at burrow during the second round.
003	Common Raven	In-use	No Longer Present	Not Surveyed	Small	Utility Tower	It appears that the ravens took the material from this nest and added it to adjacent Nest 106.
006	Common Raven	Inactive	In-use	Not Surveyed	Small	Utility Tower	
101	Common Raven	Unknown	In-use	Not Surveyed	Small	Broadleaf Tree	
105	Common Raven	Unknown	In-use	Not Surveyed	Small	Utility Tower	
106	Common Raven	Unknown	In-use	Not Surveyed	Small	Utility Tower	Recently added nest material is possibly from adjacent Nest 003, which was present during the first round but was no longer present during the second round.
002	Great Horned Owl	In-use	In-use	Inactive	Small	Broadleaf Tree	One chick observed in the nest and another observed on a branch of nest tree during the second round. Nest went from excellent condition in the first and second rounds to poor condition in the third round.
001	Red-tailed Hawk	Inactive	In-use	Not Surveyed	Small	Utility Tower	One chick observed in the nest during the second round.
100	Swainson's Hawk	Unknown	In-use	Inactive	Small	Snag	Nest went from excellent condition in the first and second rounds to good condition in the third round.

Nest ID	Species	First Round Nest Status	Second Round Nest Status	Third Round Nest Status	Nest Size	Nest Substrate	Survey Notes
108	Swainson's Hawk	Unknown	In-use	Inactive	Small	Conifer Tree	Nest was located on May 12 after initially observing an adult flush from the row of conifers where the nest is located on May 10. Nest went from excellent condition in the first and second rounds to poor condition in the third round.
004	Unknown	Inactive	Inactive	Not Surveyed	Small	Utility Tower	
005	Unknown	Inactive	Inactive	Not Surveyed	Small	Utility Tower	
107	Unknown	Unknown	Inactive	Not Surveyed	Small	Power Pole	Nest noted to be falling apart when found during the second round.

6.0 Conclusion and Recommendations

Natural resource agencies often recommend that non-disturbance buffers be placed around active (in-use) raptor nests to avoid potential adverse impacts to nesting birds. The USFWS and WDFW have not issued guidance pertaining to raptor nest setbacks for solar projects, but WDFW has provided management recommendations for priority bird species that include non-disturbance buffers for some priority species (Larsen et al. 2004). For burrowing owls, WDFW recommends that direct destruction of burrows be avoided and sources of human disturbance be avoided within a 0.5-mile buffer of burrows between February 15 and September 25 (Larsen et al. 2004). The Project Area is located beyond this recommended buffer. Tetra Tech recommends coordination with WDFW to develop appropriate spatial and temporal non-disturbance buffers around active nests of other raptor species.

Raptor nest locations vary from year to year based on a number of factors such as food supply, nest-site availability, and weather conditions. Therefore, additional pre-construction surveys may be needed if construction activities occur during the breeding season (February through August).

In addition to determining the timing and extent of the non-disturbance buffers described above, the following additional measures may be implemented to avoid and minimize impacts to raptors:

- Conduct pre-construction surveys to identify active nests prior to the start of construction.
- Conduct vegetation clearing prior to construction outside of the breeding season (e.g., September to January) for raptors and other migratory birds.
- Design overhead transmission lines in compliance with Avian Power Line Interaction Committee standards (APLIC 2012).

7.0 References

APLIC (Avian Power Line Interaction Committee). 2012. Reducing Avian Collisions with Power Lines: The State of the Art in 2012. Edison Electric Institute and APLIC. Washington, D.C. Available online at: https://www.aplic.org/uploads/files/15518/Reducing_Avian_Collisions_2012watermarkLR.pdf

Buehler, D.A. 2020. Bald Eagle (Haliaeetus leucocephalus), version 1.0. In Birds of the World (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. Available online at: https://doi.org/10.2173/bow.baleag.01

Larsen, E., J.M. Azerrad, and N. Nordstrom, editors. 2004. Management recommendations for Washington's priority species, Volume IV: Birds. Washington Department of Fish and Wildlife, Olympia, Washington, USA.

Postupalsky, S. 1974. Raptor reproductive success: some problems with methods, criteria, and terminology. Raptor Research Report 2: 21-31.

Tetra Tech. 2022. Wautoma Solar Project Habitat and General Wildlife Survey Report. Prepared for Innergex Renewable Development USA, LLC. April 2022.

USFWS (U.S. Fish and Wildlife Service). 2012. Land-based Wind Energy Guidelines. March 2012.

USFWS. 2013. Eagle Conservation Plan Guidance. Module 1 – Land-based Wind Energy, Version 2. April 2013.

USFWS. 2016. Eagle Permits; Revisions to Regulations for Eagle Incidental Take and Take of Eagle Nests. Federal Register Vol 81. No. 242. Pp 91494-91554. December 16, 2016.

USFWS. 2020. Memorandum: Eagle Surveys, From Assistant Director for Migratory Birds dated April 21, 2020. Available online at: https://www.fws.gov/birds/management/managed-species/eagle-management.php

WDFW (Washington Department of Fish and Wildlife). 2009. Wind Power Guidelines. Olympia, Washington. 30pp.

WDFW. 2020. State Listed Species and State Candidate Species, Revised February 2020. Available online at: https://wdfw.wa.gov/sites/default/files/2020-02/statelistedcandidatespecies_02272020.pdf. Accessed May 7, 2021.

WDFW. 2021a. Priority Habitats and Species database query results. Provided by WDFW April 15, 2021.

WDFW. 2021b. Fish and Wildlife Commission Presentation Summary Sheet. Meeting date: 8/27/2021. Agenda item: Ferruginous Hawk Periodic Status Review (up-list) – Decision. Available online at: https://wdfw.wa.gov/sites/default/files/2021-08/feha_decisionsummary_sheet.pdf

Figures

Wautoma Solar

Figure 1
Project Location

BENTON AND YAKIMA COUNTIES, WA

Grant County

Yakima County

Benton County

Granger

Sunnyside

243

24

240

241

223

82

Spring 2021 Survey Area

Fall 2021 Survey Area

County Boundary

INNERGEX

TETRA TECH

Reference Map

1:150,000

NAD 1983 StatePlane Washington South FIPS 4602 Feet

0 1 2 4 Miles

NOT FOR CONSTRUCTION

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Figure 2 is not included because it contains confidential information and is not intended for public distribution.